Radar sensor

RMS-M



- Microwave motion sensor with basic functionality
- Reliable detection of people and vehicles
- Simplest adjustement of the sensing range
- Easily programmable

Premium radar motion sensor with basic functionality, detection range 4.5 m x 2 m, max. installation height 4 m, black housing, relay contact output, cable connection

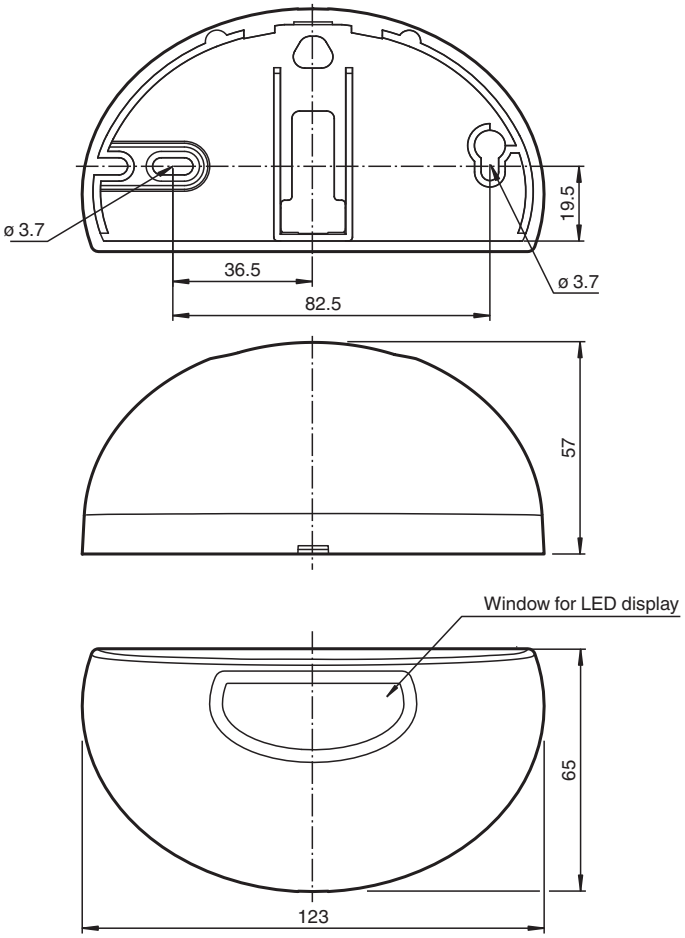
CE

Function

An effective opening of doors or industrial doors can be achieved very flexibly with the RMS microwave motion sensor series. The RC versions offer remote-controlled adjustment of parameters. Ultramodern microcontroller evaluation technology guarantees a variety of field sizes and universal use even in difficult conditions. An integrated microprocessor with 24 GHz-microwave technology ensures high reliability even under difficult usage conditions. The sensor also offers two adjustable detection areas and different operating modes, an installation height up to 4 m and operates in a temperature range of - 20 ... +60 °C.

Release date: 2020-10-08 Date of issue: 2020-10-08 Filename: 184361_eng.pdf

Dimensions



Technical Data

General specifications		
Sensing range		broad: 2000x 4500 mm (DxW) at 2200 mm mounting height and 30° tilt angle narrow: 4500x 2000 mm (DxW) at 2200 mm mounting height and 30° tilt angle
Function principle		Microwave module
Detection speed		min. 0.1 m/s
Setting angle		0 ... 40 ° in 5 ° increments
Operating frequency		24.15 ... 24.25 GHz K-Band
Operating mode		Radar motion sensor
Transmitter radiated power (EIRP)		< 20 dBm
Functional safety related parameters		
$MTTF_d$		850 a
Mission Time (T_M)		20 a
Diagnostic Coverage (DC)		0 %
Indicators/operating means		
Function indicator		LED red/green
Control elements		Potentiometer and programming button for setting: Method of connection, dropout time, response time, Interference behavior
Control elements		sensitivity adjustment
Electrical specifications		
Operating voltage	U_B	12 ... 36 V DC , 12 ... 24 V AC
No-load supply current	I_0	≤ 50 mA at 24 V DC
Power consumption	P_0	≤ 1 W
Output		

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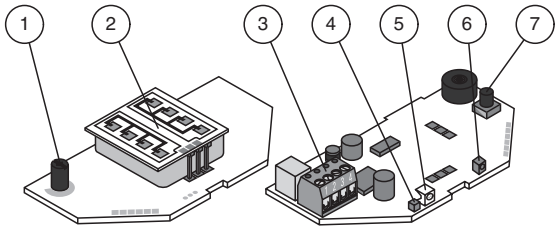
Technical Data

Switching type		NO/NC
Signal output		relay
Switching voltage		max. 48 V AC / 48 V DC
Switching current		max. 0.5 A AC / 1 A DC
Switching power		max. 24 W / 60 VA
De-energized delay	t_{off}	0.2 ... 10 s adjustable (1 sec factory setting)
Approvals and certificates		
CE conformity		2014/53/EU This device can be used in all countries within the European Union. In other countries, all applicable national regulations must be observed.
FCC approval		No - Use in North America is not permitted.
Ambient conditions		
Operating temperature		-20 ... 60 °C (-4 ... 140 °F)
Storage temperature		-30 ... 70 °C (-22 ... 158 °F)
Relative humidity		max. 90 % non-condensing
Mechanical specifications		
Mounting height		max. 4000 mm
Degree of protection		IP54
Connection		plug-in screw terminals 4-pin , 5 m connecting cable included with delivery
Material		
Housing		ABS, anthracite
Mass		120 g
Dimensions		123 mm x 65 mm x 57 mm
Suitable series		
Series		RMS

Connection Assignment



Assembly



1	Potentiometer
2	Antenna
3	Terminal
4	IR-transmitter (RC version only)
5	LED (red/green)
6	IR-receiver (RC version only)
7	Programming button

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Application



Accessories

	**RMS Weather Cap**	All-weather hood for RMS series microwave sensors, for ceiling and wall installation
	**RMS/RaDec Ceiling Kit wh**	Ceiling mount kit for radar sensors in the RMS and RaDec Series

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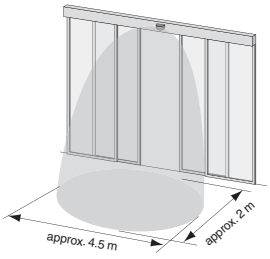
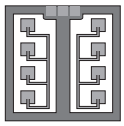
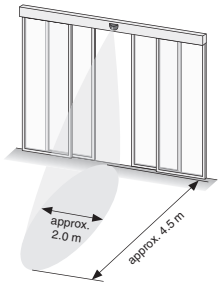
Detection range

Installation instructions



Installation height 2200 mm / angle of detection field 30°
Antenna position:





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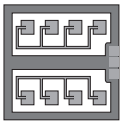
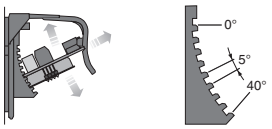
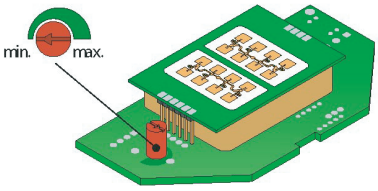




The detection field can be swivelled in 5 steps from 0 to 40°.
The guide plate can be inserted on a slant.

Sensitivity settings

The sensitivity potentiometer can be used to adjust the size of the detection field.





Function display

LED green	Ready for operation
LED red	Relay active
LED green flashing	Command received
LED red flashing	Error
LED green/red flashing	Initialisation (for about 10 seconds after switching on)

Accessories

Other suitable accessories can be found at www.pepperl-fuchs.com

Function Principle

Microwave sensors are microwave scanners that use the principle of the Doppler radar. The most important requirement for microwave detection is that the object to be detected is moving.
The microwave sensors emit microwaves of a defined frequency in order to detect people and large objects moving at speeds

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between 100 mm/sec and 5 m/sec.
The microwaves emitted by the emitter are reflected back from the ground or other surfaces to the receiver. If there is no motion in the monitored zone, the emitted and reflected frequencies are identical. Nothing is detected. If people, animals or objects are moving in the monitored zone, the reflected frequency changes and therefore triggers a detection.
Microprocessor-controlled motion sensors based on the latest 24 GHz technology provide a high degree of reliability even under difficult operating conditions. The 24 GHz frequency, known as 'K-band,' is reserved by CETECOM for this application area worldwide.

Application

- Opening impulse sensor for automatic and industrial doors
- Monitoring approach areas to automatic doors and elevators
- Motion sensor for people and objects
- Impulse sensor for escalators
- Opening impulse sensor for entry doors

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